

## TECHNICAL SPECIFICATIONS

<b>INTRINSIC JITTER</b>	< 140ps RMS measured over a bandwidth of 10Hz-40kHz
<b>POWER SUPPLY</b>	EI-Laminate power transformer featuring 9 stages of power supply regulation
<b>TRANSPORT MECHANISM</b>	Sony (6 pack Vertical Changer) Plays 5" discs and 3.5" discs (3.5" discs - single play only)
<b>HDCD FILTER/DECODER</b>	Pacific Microsonics - PMD 100
<b>D/A CONVERTER</b>	Dual Burr-Brown PCM 1702P
<b>TUBE COMPLEMENT</b>	1-6922/E88CC in a high speed output buffer configuration
<b>ANALOG OUTPUT</b>	1- pair single ended RCA
<b>DIGITAL OUTPUT</b>	1- AES/EBU on XLR male connector 1- S/PDIF on RCA Co-Ax connector
<b>INFRA-RED OUTPUT</b>	1 - via 3.5mm stereo jack
<b>FREQUENCY RESPONSE</b>	5Hz-20kHz ±.25dB
<b>"A" WEIGHTED S/N RATIO</b>	>-110 dB from 10Hz-20kHz
<b>CROSS TALK</b>	-75dB @ 10kHz (>-65dB from 20Hz-20kHz)
<b>THD</b>	<.01% from 10Hz-20kHz
<b>MAX. OUTPUT LEVEL</b>	Approx. 2 Volts
<b>POWER REQUIREMENTS</b>	100-120VAC ~ 50/60Hz (1A/250V Fast-Blo fuse) 220-240VAC ~ 50/60Hz (0.5A/250V Fast-Blo fuse) 70VA Maximum
<b>DIMENSIONS</b>	19" (48cm) W x 13" (33cm) D x 5.25" (13cm) H
<b>NET WEIGHT</b>	24lbs (11kg) unpacked



We at Sonic Frontiers hope you will derive many years of listening pleasure with your new Anthem CD 1. This Operating Manual contains important information regarding the operation and care of the CD 1. Be sure to read this manual carefully and follow these instructions in order to keep it performing and sounding its best. Please contact Sonic Frontiers if you have any questions - a Customer Service Representative will be pleased to assist you.



**DANGER:**  
**INVISIBLE LASER RADIATION**  
**POSSIBLE WHEN THE TOP COVER**  
**IS REMOVED. AVOID DIRECT**  
**EXPOSURE TO THE LASER BEAM.**

## WHAT'S IN THE BOX?

In addition to the CD 1, its cover, and the operating manual you are presently reading (with associated inserts and warranty card), there are a few more items to take inventory of before steps are taken to make the Anthem CD 1 operational.

These items are:

- one 6922 tube
- a glove for handling the tube
- a detachable AC power cord
- 18 screws
- 1 Philips screwdriver

After completing an inventory of these items, proceed to the next steps.

## SETTING UP

The CD 1 comes with one 6922 tube. The 6922 tube may be replaced with an ECC88/6DJ8 or E188CC/7308 with no circuit modification. This tube was chosen for its reliability and extremely low noise. The tube's low noise heightens dynamics and provides a natural tonal balance.

### INSERTION OF THE TUBE

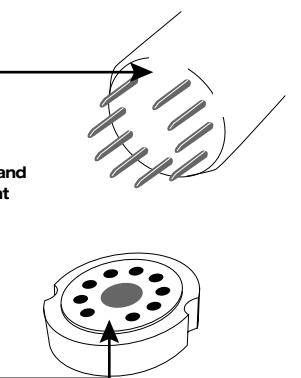
1. Using the screwdriver supplied, remove the cover of the CD 1. For your convenience, only eight (approx.) of the screws are installed at the factory.

2. When handling the tube, it is recommended that the cotton glove provided be worn to prevent skin oils from depositing on the glass surface.

3. Noting the location of the tube socket in the top view photo (Figure 2) or directly on the PC Board. Once located, take the tube and inspect the pins, noting the larger space between two of the pins (see Figure 1). This space will match with the socket. Insert the tube into the tube socket, making sure all pins and pin holes are aligned. Do not force the tube into the socket. "Rock" the tube gently while pushing slowly until it is firmly seated.

Note the larger space between two of the pins and holes for proper alignment of tube and socket.

Figure 1



After the insertion of the tube, replace the cover and fasten it with the screws provided. The CD 1 is now ready for operation. For further information on tube replacement, NOS (New Old Stock) tubes, contact your dealer, a Sonic Frontiers Customer Service Representative or The Parts Connection, a division of Sonic Frontiers.

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**WARNING - DISCONNECT THE AC**  
**DETACHABLE POWER CORD FROM THE**  
**CD 1 AND WAIT 5 MINUTES BEFORE**  
**REMOVING COVER, TUBES OR FUSE.**



## WARRANTY

### LIMITED FIVE YEAR WARRANTY

Sonic Frontiers International warrants to the purchaser that each component is free of manufacturing defects for a period of five (5) years from the date of purchase. This five (5) year limited warranty excludes all vacuum tubes and CD Transport mechanisms, which are warranted for a period of twelve (12) months. To receive this warranty, the original purchaser must complete and mail to Sonic Frontiers International, within thirty (30) days from the date of purchase, the enclosed Warranty Registration Card which validates the warranty. This warranty is subject to the following conditions and limitations:

### DISCLAIMER OF LIABILITY

Under no circumstances does Sonic Frontiers International assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connected to it. Sonic Frontiers International reserves the right to make design changes or improvements without the obligation to revise prior versions. All specifications are subject to change without notice.

Warranty applies only to the original purchaser and is non-transferable.

This warranty is void and inapplicable if the product has been handled other than in accordance with the instructions of our Owner's Manual, abuse or misused, damaged by accident or neglect or in being transported, or the defect is due to the product being tampered with, modified or repaired by anyone other than Sonic Frontiers International, or an authorized Sonic Frontiers International repair service center.

Warranty does not cover normal maintenance.

Sonic Frontiers International shall not be responsible in any way for consequential or indirect damages or liabilities resulting from the use and operation of the product covered herein or resulting from any breach of this warranty or any implied warranty relating to said product.

During this period, Sonic Frontiers International will repair or replace any defective components free of charge. A Return Authorization Number (RA number) is required before any product is returned to our factory for any reason. This number must be visible on the exterior of the shipping containers for Sonic Frontiers International to accept the return.

Units to be repaired by Sonic Frontiers International must be sent shipping and insurance prepaid by the original purchaser in the original packing material. A returned

product should be accompanied by a written description of the defect. Repaired units will be returned by Sonic Frontiers International shipping and insurance prepaid.

Units shipped to us without a Return Authorization Number or without a visible RA Number on the exterior of the shipping containers will be returned to the sender, freight collect.

All other warranties or conditions either written or implied are void.

Sonic Frontiers International reserves the right to improve the design of any product without assuming any obligation to modify any product previously manufactured. This warranty is in lieu of all other warranties expressed or implied, of merchantability, fitness for any particular purpose and may not be extended or enlarged by anyone. In no event shall Sonic Frontiers International, their agents or representatives be responsible for any incidental or consequential damages. Some jurisdictions do not allow limitations of incidental or consequential damages, so this exclusion may not apply to you.

## FREQUENTLY ASKED WARRANTY QUESTIONS

### WHAT IS THE DISPLAY WARRANTY?

Display equipment sold by an authorized dealer has a full 5 year Parts & Labor and 30 day Tube & Transport Mechanism warranty (as of the date of the customers invoice) or the balance of the 1 year Tube & Transport Mechanism warranty (as of the date of the dealer invoice) - which ever is longer.

### WHAT IS THE USED EQUIPMENT WARRANTY?

The balance of the 5 year Parts & Labor and 1 year Tube & Transport Mechanism warranty can be transferred on used equipment only IF the unit is traded in to an authorized Sonic Frontiers/Anthem Dealer. An authorized SF/Anthem dealer can resell the unit with the remaining warranty if it is cosmetically acceptable, in perfect working condition, and has not been internally or externally altered in any way. We ask that the dealers call the factory and advise us of the serial number of the unit to register the warranty of the new owner.

### WHAT IS THE USED EQUIPMENT WARRANTY - FROM A NON-AUTHORIZED DEALER?

Used equipment purchased from a non-authorized dealer or private sale has no SFI warranty.

**PLEASE READ CAREFULLY!**

#### BREAK-IN TIME

As with all audio electronic products, the ultimate sonic character of the CD 1 will not be realized until and unless the unit receives a minimum of approximately 70 hours of signal break-in time (i.e. the CD 1 is on and producing an output signal).

#### PLACEMENT FOR PROPER VENTILATION

Allow at least 4" (15 cm) of clear space above the CD 1 chassis for proper ventilation, making sure the air vent slots in the chassis cover remain unobstructed. Also, be sure that the CD 1 is placed on a secure, hard and level surface (not on carpet).

#### SAFETY INSTRUCTIONS



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1. Ventilation - Although your CD 1 generates only nominal heat in use, be sure that the ventilation slots in the top cover have at least 4" of unobstructed air space above them.

2. Water and Moisture - This product should not be used near water. To prevent fire or shock hazard, do not expose this product to rain or moisture.

3. Heat - This product should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances which produce heat.

4. Power Sources - This product should be connected to an AC power source of the proper rated voltage. The original shipping container will stipulate the AC voltage this unit can operate with correctly.

5. Cleaning - A regular dusting with a soft, non-abrasive cloth will generally keep the finish of the faceplate and chassis looking like new. At no time should you allow any liquid to come in contact with the CD 1; it may run into the electronic circuitry and cause damage which will not be covered under your warranty.

6. Servicing - Do not open this product. No user serviceable parts inside. Refer servicing to an authorized service technician.

7. Non-Use Periods - The power cord of this product should be unplugged from the outlet when left unused for an extended period of time.

8. Do not remove the CD 1 cover while the unit is "on", or connected to an AC power source. Cover screws could fall through the ventilation slots and cause electrical damage to the CD 1. The player may leak invisible laser radiation if the cover is removed. Avoid direct exposure to the laser beam.

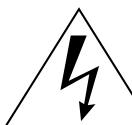
#### PACKING MATERIALS

Please retain all of the packing material and shipping boxes for your CD 1. They are custom designed to prevent shipping damage from occurring. Sonic Frontiers, Inc. will accept no responsibility for any damage occurring to a CD 1 that is shipped in packing material other than the original Sonic Frontiers packing material.

#### DISCLAIMER OF LIABILITY

Under no circumstances does Sonic Frontiers, Inc. assume liability or responsibility for injury or damages sustained in the use or operation of this equipment or for damages to any other equipment connected to it.

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This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

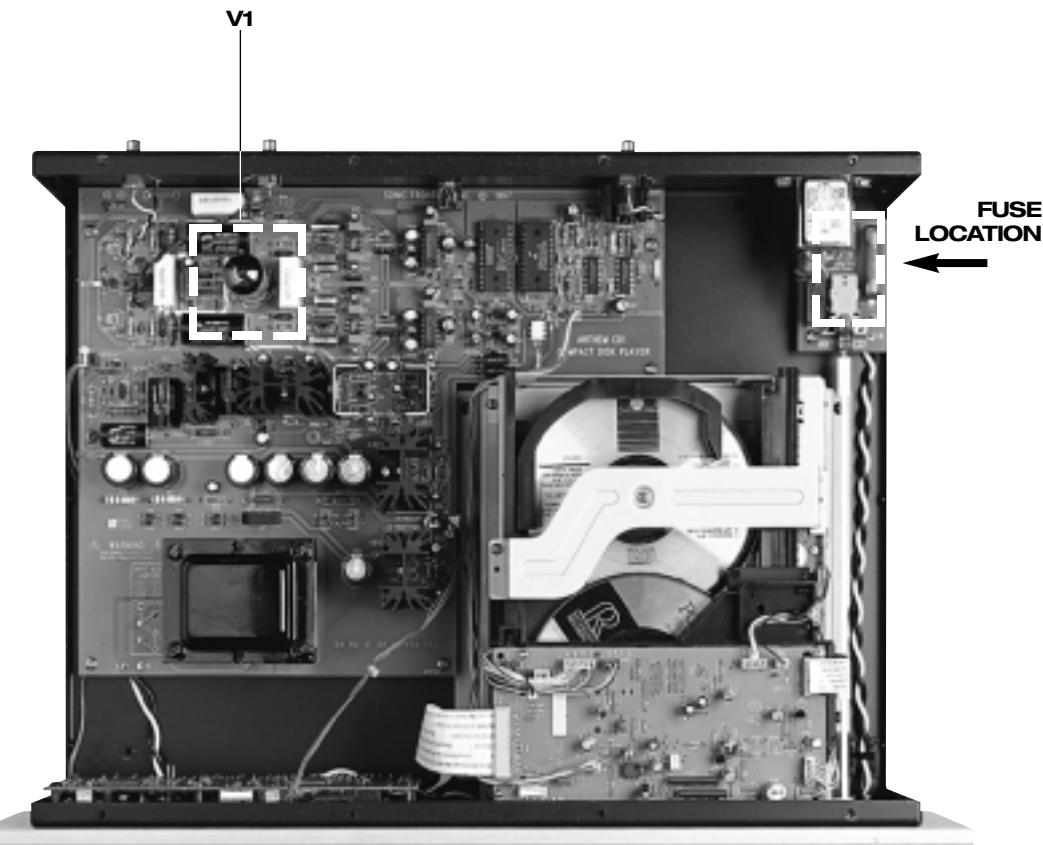


Figure 2 - Tube and Fuse Location



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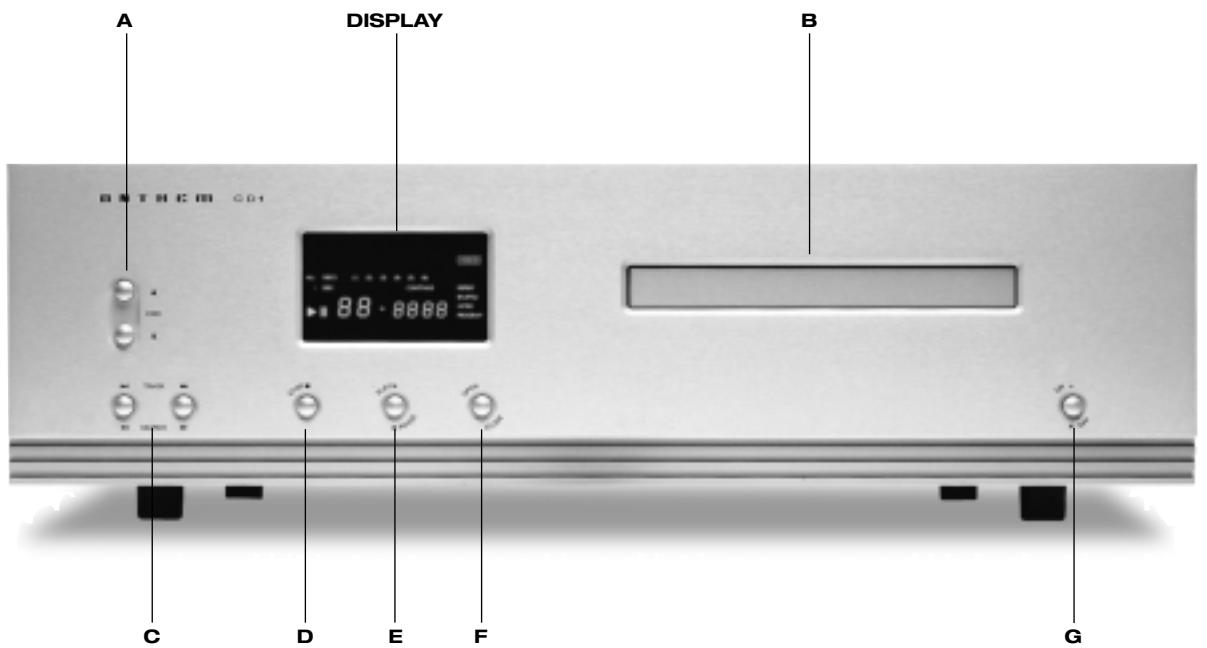


Figure 3. CD 1 Front

## OPERATION

Before plugging in the CD 1, check to see that the unit is configured for the correct AC line voltage for country of use. The operating AC line voltage is indicated on the side of the shipping box. If the CD 1 is set incorrectly for the country in which it is to be operated, contact the dealer or distributor in your area. If the unit is configured properly, continue with operation.

Connect the Detachable Power Cord to the CD 1 chassis rear (see Figure 6). Plug your CD 1 into the AC power source. You may now turn on the CD 1.

**Note: Never unplug your CD 1 during operation. First shut off your Power Amplifier, then stop the CD 1 by depressing the Stop button (D), and remove AC power by pressing and releasing Power Switch (G).**

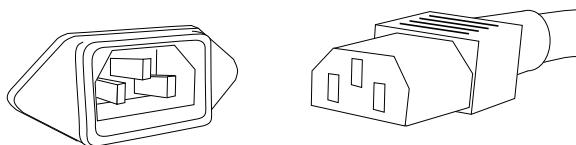


Figure 6 - Alignment of the AC power connector and detachable cord.

It is recommended that you shut OFF the main power via the Power Switch (G) when not listening.

## TROUBLESHOOTING

If at any time the CD 1 fails to work properly, consult this checklist:

1. Check that the AC Detachable Power Cord is plugged into the CD 1 Detachable Power Cord Socket (H) and is connected to a live source of AC power. For instance, if using a power bar, check that the bar is turned on.

2. Ensure that all Input and Output connections are secure for a proper electrical contact.

3. DISCONNECT THE AC POWER CORD, wait 5 minutes, remove the chassis covers from the CD 1 and check that:

- A "fast-blo" fuse, with a rating of 1 Amp/250 V (0.5 Amp/250 V for European and Asian versions), is installed on the circuit board under the soft plastic cover (see figure 2).
- The AC power fuse is intact and has not blown. If the fuse has blown, the thin metal conductor will have melted and the glass may appear "smoked". If the fuse has blown, replace with a fuse of the same rating (1 Amp/250V fast-blo for 100 to 120 volt countries and .5 Amp/250V fast-blo for 220 to 240 volt countries). (See Figure 2.)

NOTE: Under no circumstances should you replace the AC power fuse with one of a higher current rating! Doing so may cause damage to the CD 1 and will also void the warranty. In addition, your continued protection from risk of fire or shock would be seriously compromised.

- Ensure the tube is plugged firmly into its socket.

4. Be sure the rest of the system is functioning properly (i.e. preamps, power amplifiers, cables and connections, etc.).

5. With tubes, fuses, covers and power cords in place, check that the Display is lit. If all of the above troubleshooting steps have been followed and the Display is not lit, contact your dealer or distributor for assistance.

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## REMOTE CONTROL FUNCTIONS CONT'D (REFER TO FIGURE 5)

### O TRACK FORWARD AND REVERSE BUTTONS

The Track buttons will advance to the next track or go back to the previous track. If the << button is pressed in the middle of a track, the player will begin the same track again. If you press it twice quickly it will play the previous track on the disc. If you are in Pause and you press the << Track button once it will proceed to the beginning of the same track and wait for you to press the Pause or Play button.

### P STOP BUTTON

The STOP button will stop all functions and the display will show the disc number, total track numbers and the total time on the disc in the tray.

### Q DISC DIRECT SELECT BUTTONS

These buttons allow you to directly select your desired disc (D1-D6).

### R TIME BUTTON

The TIME button will change the display readout from the track number and elapsed time to remaining track number and total time remaining (In PLAY mode only). Press it again to see the track number and elapsed time.

### S REPEAT BUTTON

The REPEAT button will allow you to play 1 song, 1 disc or all discs repeatedly. The words REPEAT, 1 DISC REPEAT or ALL DISCS REPEAT are shown in sequence in the display panel as you push the button. Pressing REPEAT again, when ALL DISCS REPEAT is displayed, will defeat this function.

### T SHUFFLE BUTTON

Pressing SHUFFLE will randomly play tracks on the selected disc. SHUFFLE and 1 DISC will show in the display. Pressing SHUFFLE again will cause it to play all the discs/tracks in the CD 1 randomly. Pressing SHUFFLE a third time, or pressing STOP will defeat SHUFFLE operation.

### U SCAN BUTTON

SCAN will play 8 seconds of each song on a disc. The word INTRO and the track/disc number will show in the display window. Pressing SCAN a second time will cause it to SCAN all discs in the CD 1 shuttle system. Pressing SCAN a third time will defeat SCAN.

SHUFFLE, REPEAT and SCAN functions may be combined, if you wish. (SHUFFLE and PROGRAM will not combine.)

### V PROGRAM BUTTON

The PROGRAM button will be used when you program song tracks on the disc (or discs) for play in a specific order or to make a recording. The CD 1 will remember up to 16 tracks in a program.

To begin a PROGRAM, load a disc into the drawer and press the OPN/CLS button. The CD 1 will read the table of contents on the disc and display the total number and track time on the disc. Press the PROGRAM button on the remote control. The display will show P, the disc and track number. Press DISC + or - (D1-D6 on the remote control) to change the disc selected during programming. Press the PROGRAM button again and the disc track numbers will be entered into the program memory. Repeat this for the discs/tracks you wish to program. The disc/track numbers will illuminate in the display as you enter them into your PROGRAM. You may review the disc/track sequence entered into the program by pressing the PROGRAM button repeatedly. At the end of the PROGRAM the display will show END and "blink" PROGRAM. Pressing the STOP button twice or OPN/CLS button will erase a program from the memory. SCAN, REPEAT and PROGRAM may be combined.

### W PAUSE BUTTON

Pressing PAUSE will make the CD player stay in the same place on the CD while it continues to spin. No sound will be heard until you press the PLAY or PAUSE button again to resume playing the disc. The PAUSE indicator will illuminate in the display window next to the PLAY arrow.

### X PLAY BUTTON

Pressing the PLAY button while the drawer is open will cause the drawer to Close and any loaded discs will start to Play. The Display will read 00 and LOAD when you do this. You may select a track number before pressing Play and the CD player will begin play with the selected track number. The disc number, play indicator "arrow" and the word LOAD will "blink" in the display. You may also gently push the drawer inward and it will close.

## CONTROL FUNCTIONS (REFER TO FIGURE 3)

### A DISC BUTTON

The DISC (+ and -) buttons will select the disc number and begin PLAY. The display will show which disc is currently selected, the track number and the total time on the disc. When the CD 1 loads a disc into the shuttle system, it will read the table of contents of the disc. It will show this information for all the discs loaded as you select them with the + and - buttons. It will briefly show 00 and LOAD during the changing of discs by the shuttle system.

### B CD DRAWER

To load a CD into the CD 1, press the OPN/CLS button. The loading tray will open. Place a CD, label side up, in the loading tray. Press the OPN/CLS button again, the tray will close and the shuttle system will load the disc into one of its loading slots. The display will show which number the disc is by highlighting the disc number in parenthesis. Continue loading discs by repeating this procedure until the CD 1 is full or until you have the number of discs you want loaded in the shuttle system. The CD 1 will accept both 5" discs and 3.5" mini discs. The 3.5" mini discs will only work for single disc play, they will not load into the shuttle system.

### CD STORAGE LOCATION

To load a CD to a desired location, use the Disc button (A) to select a vacant disc position (non-parenthesis number), open the CD drawer, load the disc and close the CD drawer.

### C TRACK/SEARCH BUTTONS

TRACK: The Track buttons (<<, >>) will advance to the next Track (>>) or will go back to the previous Track (<<) on the disc. If you are in the middle of a song and you press the << Track button once, the player will begin the same song again. If you press it twice, quickly, it will play the previous song on the disc. If you are in Pause and you press the << Track button once it will proceed to the beginning of the same track and wait for you to press the Pause or Play button. Pressing the >> Track button will cause the CD player to skip to the next track on the disc.

SEARCH: If you continually press the Forward Search (>>) or Reverse Search (<<) buttons, it will cause the CD player to quickly go forward or backwards in time quickly when playing a song. Release the button when you have reached the desired time in your selected song track.

### D STOP BUTTON

The STOP button will stop all functions and the display will show the disc number, total track numbers and the total time on the disc in the tray.

### E PLAY/PAUSE BUTTON

Pressing the PLAY button while the drawer is open will cause the drawer to Close and any loaded discs will start to Play. The Display will read 00 and LOAD when you do this. You may select a track number before pressing Play and the CD player will begin play with the selected track number. The disc number, play indicator "arrow" and the word LOAD will "blink" in the display. You may also gently push the drawer inward and it will close and play.

*Note: For 45 seconds after the unit is turned on the output will be muted. The CD 1 will function normally but no sound will be produced.*

Pressing the PLAY/PAUSE button a second time will make the CD player stay in the same place on the CD while the CD continues to spin. No sound will be heard until you press the PLAY/PAUSE button again to resume playing the disc. The Pause indicator (II) will illuminate in the display next to the Play arrow.

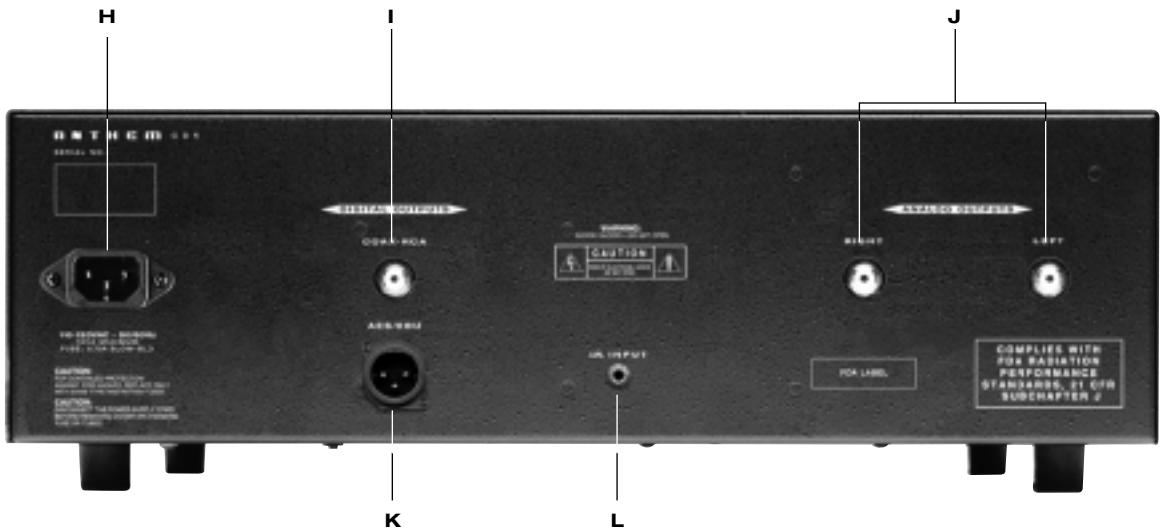
### F OPEN/CLOSE BUTTON

The OPN/CLS button will OPEN the drawer after you have pushed it. The Display will show the Disc number in parenthesis, 00 and OPEN. A second push of the button will CLOSE the drawer with the Display showing the disc number, 00 and LOAD. The Display will first show 00 and LOAD and then NO DISC when there is no CD in the loading tray. When a disc is in the tray the Display will show the number of Tracks and the Total Time on the disc.

### G ON-OFF BUTTON

The POWER button will turn the CD player ON and OFF. Push it once and the CD 1 will turn ON. The DISPLAY will illuminate at the same time. If you push the Power button again the power will go OFF and the Display will extinguish.

*Note: If you use your system with a remote controlled preamplifier or surround sound processor with switched AC outlets, it may be convenient to leave the POWER button in the ON position. Then you may switch the power ON and OFF to the CD 1 with the preamplifier or surround sound processors remote control. Ask your Anthem Authorized Dealer for advice about this, if this unfamiliar to you.*



#### INPUT/OUTPUT INTERCONNECTIONS (REFER TO FIGURE 4)

##### H DETACHABLE IEC AC POWER CORD SOCKET

Plug the Detachable Power Cord into this socket (see Figure 4). The CD 1 is factory set for the correct operating voltage for the area in which it is sold (see shipping box for voltage setting). If a different operating voltage is required, please contact an authorized Sonic Frontiers or Anthem dealer, distributor or the factory directly.

##### I DIGITAL S/PDIF OUTPUT (VIA FEMALE RCA COAX)

This digital output is an RCA S/PDIF connector. If chosen for use, this digital output should be connected to an S/PDIF connector on your DAC. The RCA Coaxial cable impedance should be 75 ohms.

##### J DIGITAL AES/EBU OUTPUT (VIA MALE XLR)

This digital output conforms to the AES/EBU (Audio Engineering Society/European Broadcast Union) standard. If this output is chosen for use, a 110 ohm balanced cable terminated with XLR plugs should be used for a connection to the DAC.

##### K ANALOG OUTPUT CONNECTIONS

The rear panel of the CD 1 has the analog output connections. These are RCA jacks and should be connected to the CD or AUX input of your stereo integrated amp, receiver or preamplifier. Please observe the correct Left and Right channel connections for optimum enjoyment of your stereo.

##### L I.R. INPUT

An infrared extension unit may be connected to this 3.5 mm phono connector to allow control access via the Remote Control from other rooms or when the CD 1 is obstructed from direct view of the Remote (ie. the CD 1 is in a closed cabinet).

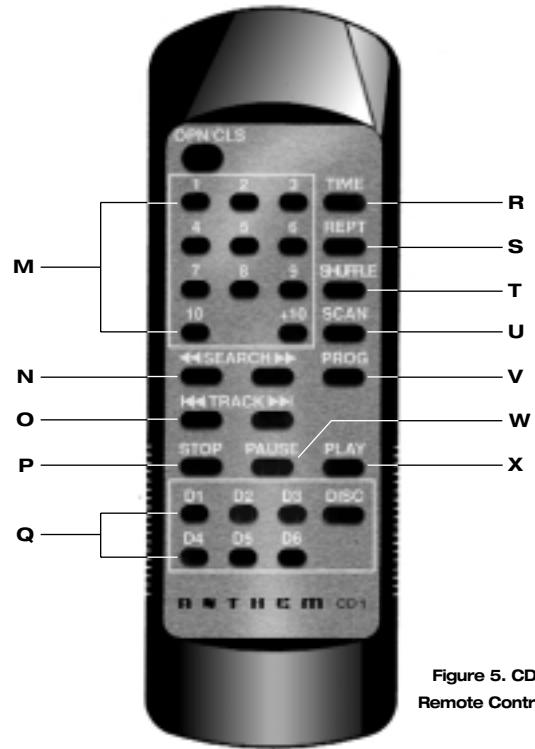


Figure 5. CD 1  
Remote Control

#### REMOTE CONTROL FUNCTIONS (REFER TO FIGURE 5)

##### M NUMERIC KEYPAD

This keypad allows tracks to be selected directly. Punch the desired track number and then the next function (either PLAY or PROGRAM) to complete the selection.

##### N SEARCH FORWARD AND REVERSE BUTTONS

When depressed and held, these buttons allow you to search forwards or backwards in the current track. The time positioning and track are shown in the display window.

Figure 4. CD 1 Rear

## A N T H E M

A ♡ T H E M C D 1

OPERATING MANUAL



DESIGNED AND MANUFACTURED BY SONIC FRONTIERS INTERNATIONAL  
3535 LAIRD ROAD, UNIT #16, MISSISSAUGA, ONTARIO, CANADA L5L 5Y7 TEL: 905-828-4575 FAX: 905-828-4585  
Sonic Frontiers can be reached 9:00 am to 6:00 pm (E.S.T.) or 24 hours a day by facsimile  
E-Mail: SFI@sonicfrontiers.com Web Site: <http://www.sonicfrontiers.com>